

# ACTUARIAL VALUATION REPORT



Southbridge Retirement System  
January 1, 2004



# PERAC ACTUARIAL VALUATION REPORT

Southbridge Contributory Retirement System

January 1, 2004

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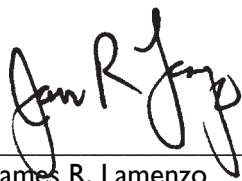
## I. INTRODUCTION & CERTIFICATION

This report presents the results of the actuarial valuation of the Southbridge Contributory Retirement System. The valuation was performed as of January 1, 2004 pursuant to Chapter 32 of the General Laws of the Commonwealth of Massachusetts.

This valuation was based on member data as of December 31, 2003, which was supplied by the Retirement Board. Such tests as we deemed necessary were performed on the data to ensure accuracy. Asset information as of December 31, 2003 was provided in the Annual Statement for the Financial Condition as submitted to this office in accordance with G.L. c. 32, ss. 20(5)(h), 23(1)(c) and 23(2)(e). Both the membership data and financial information were reviewed for reasonableness, but were not audited by us.

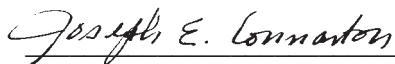
In our opinion, the actuarial assumptions used in this report are reasonable, are related to plan experience and expectations, and represent our best estimate of anticipated experience under the system. We believe this report represents an accurate appraisal of the actuarial status of the system performed in accordance with generally accepted actuarial principles and practices relating to pension plans.

Respectfully submitted,  
Public Employee Retirement Administration Commission



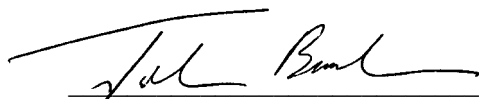
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Joseph E. Connarton  
*Executive Director*



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January 5, 2005

## 2. EXECUTIVE SUMMARY

### PART A | COSTS UNDER CURRENT VALUATION

The results of the January 1, 2004 actuarial valuation are as follows:

Total Normal Cost	\$1,409,702
Expected Employee Contributions	<u>800,029</u>
Net Normal Cost	<u>\$609,673</u>

Total Actuarial Liability	\$40,239,767
Assets	<u>20,295,180</u>
Unfunded Actuarial Liability	<u>\$19,944,587</u>

The Board recently adopted a funding schedule effective in FY05. The appropriation for FY05 under this schedule is shown below.

#### Current Funding Schedule for the Fiscal Year Beginning July 1, 2004

	Dollar Amount	Percent of Payroll
Normal Cost (adjusted for timing)	\$640,157	6.6%
Estimated Administrative Expenses	\$100,000	1.0%
Amortization of Unfunded Actuarial Liability (24-year, 4.5% increasing)*	\$854,725	8.8%
Amortization of increase in liability due to 2002 ERI (15-year level)	<u>\$93,200</u>	<u>1.0%</u>
Total	\$1,688,082	17.3%

All amounts assume appropriations will be made August 15 each fiscal year.

\* FY05 maintained at same level as prior schedule.

## 2. EXECUTIVE SUMMARY *(continued)*

### PART B | COMPARISON WITH PRIOR VALUATION

The last full valuation was performed by PERAC as of January 1, 2003, although no report was issued. Our Local Experience Study Analysis (issued in March, 2002) forms the basis for the actuarial assumptions (other than the investment return assumption) used in this valuation. Below we have shown the comparison between the two valuations.

	PERAC 1/1/04	PERAC 1/1/03	Increase (Decrease)	% Increase (Decrease)
Total Normal Cost	\$1,409,702	\$1,330,542	\$79,160	5.9%
Expected Employee Contributions	<u>800,029</u>	<u>733,736</u>	<u>66,293</u>	9.0%
Net Normal Cost	<u>\$609,673</u>	<u>\$596,806</u>	<u>\$12,867</u>	2.2%
Actuarial Liability				
Actives	\$19,709,160	\$18,424,829	\$1,284,331	7.0%
Retirees and Inactives	<u>20,530,607</u>	<u>21,031,049</u>	<u>(500,442)</u>	(2.4%)
Total	\$40,239,767	\$39,455,878	\$783,889	2.0%
Assets	<u>20,295,180</u>	<u>16,790,105</u>	<u>3,505,075</u>	20.9%
Unfunded Actuarial Liability	<u>\$19,944,587</u>	<u>\$22,665,773</u>	<u>(\$2,721,186)</u>	(12.0%)
Funded Ratio	50.4%	42.6%	7.8%	

## 2. EXECUTIVE SUMMARY *(continued)*

### PART B | COMPARISON WITH PRIOR VALUATION *(continued)*

Actives	PERAC 1/1/04	PERAC 1/1/03	% Difference
Number	314	319	(1.6%)
Total Payroll	\$9,736,750	\$9,162,439	6.3%
Average Salary	\$31,009	\$28,722	8.0%
Average Age	42.9	42.9	0.0%
Average Service	9.0	8.9	1.1%

Retirees and Survivors	PERAC 1/1/04	PERAC 1/1/03	% Difference
Number	160	167	(4.2%)
Total Benefits*	\$2,032,518	\$2,037,568	(0.2%)
Average Benefits*	\$12,703	\$12,201	4.1%
Average Age	71.0	70.8	0.3%

*\*excluding State reimbursed COLA*

## 2. EXECUTIVE SUMMARY *(continued)*

### PART C | GAIN/LOSS ANALYSIS AND PLAN FUNDING SCHEDULE

Since the last valuation, plan experience in aggregate was about as assumed. There was an actuarial gain on plan assets since the actual rate of return was greater than the 8.0% annual assumed rate. The rate of return for 2003 was 18.58%. There was an asset gain on a market value basis of approximately \$1.6 million.

There was a loss on plan liabilities primarily due to salary increases for continuing members being greater than expected. There was a small gain due to a decrease in the number of retirees.

In 2002 the Early Retirement Incentive Program was adopted. The increase in liability due to the ERIP was approximately \$760,100. Please see our separate report for more information.

In 2002 we released our Local Experience Study Analysis of local retirement systems. The study analyzed the actual experience over the prior four years with respect to retirement, disability, turnover (withdrawal), mortality, and salary increases for approximately 30 systems. As part of that study we revised the actuarial assumptions with respect to retirement, disability, turnover, mortality rates, and the salary scale. The proposed changes are based on both the actual past and anticipated future experience. Changes to the disability, turnover, and salary increase assumptions decreased total plan cost. Changes to retirement rates and using a more current mortality table increased total plan cost. Overall, the revised assumptions produce a total plan cost less than under the prior assumptions.

As part of this valuation, the Board adopted an actuarial value of assets methodology that smoothes investment gains and losses. The methodology reduces the potential volatility inherent in the market value approach. Since there have been losses on a market value basis two of the past three years, the smoothing methodology somewhat mitigates the market value losses. Over the long term, this approach is conservative and should help the Board better estimate future appropriation levels.

The funding schedule presented in this report was recently adopted by the Board. This schedule amortizes the unfunded actuarial liability through 2028 with payments increasing 4.5% each year. The schedule features a phase-in period through FY09. Appropriation amounts for these years in any future schedule cannot be less than the figures in this schedule.

We are available to work with you in determining alternative funding schedules at your request.



### 3. SUMMARY OF VALUATION RESULTS

A. Number of Members on Current Valuation Date	
Active Members	314
Vested Terminated Members	5
Retired Members and Survivors	<u>160</u>
Total	479
B. Total Regular Compensation of Active Members	\$9,736,750
C. Normal Cost	
Superannuation	\$926,722
Death	97,413
Disability	229,415
Termination	<u>156,152</u>
Total Normal Cost	\$1,409,702
Expected Employee Contributions	<u>800,029</u>
Net Employer Normal Cost	\$609,673
D. Actuarial Liability	
Active	
Superannuation	\$17,248,807
Death	559,733
Disability	1,386,246
Termination	<u>514,374</u>
Total Active	\$19,709,160
Vested Terminated Members	458,774
Non-Vested Terminated Members	158,971
Retirees and Survivors	<u>19,912,862</u>
Total Actuarial Liability	\$40,239,767
E. Actuarial Value of Assets	20,295,180
F. Unfunded Actuarial Liability: D – E	\$19,944,587
G. Funded Ratio: E/D	50.4%

## 4. APPROPRIATION DEVELOPMENT FOR FISCAL YEAR 2005

### PART A | DERIVATION OF APPROPRIATION

#### Cost Under Current Funding Schedule

1. a. Normal Cost as of January 1, 2004	\$609,673
b. For FY05 (adjusted for timing)	\$640,157
c. Estimated Administrative Expenses	\$100,000
d. Total Employer Normal Cost (b+c)	\$740,157
2. a. Unfunded Actuarial Liability as of January 1, 2004	\$19,124,051
b. FY05 amortization payment (24-year, 4.5% increasing)*	\$854,725
3. a. Unfunded Liability due to 2002 ERI	\$820,536
b. FY05 amortization payment (15-year level)	\$93,200
4. Total FY05 Payment [Sum of 1(d), 2(b), and 3(b)]	\$1,688,082

\* FY05 appropriation was maintained at the same level as the prior schedule.

## 4. APPROPRIATION DEVELOPMENT FOR FISCAL YEAR 2005

(continued)

### PART B | CURRENT FUNDING SCHEDULE

<i><b>Fiscal Year</b></i>	<i><b>Normal Cost</b></i>	<i><b>Amort. of UAL</b></i>	<i><b>Amort. of 2002 ERI</b></i>	<i><b>Total Cost</b></i>	<i><b>BoFY Balance</b></i>
2005	740,157	854,725	93,200	1,688,082	20,742,370
2006	780,865	925,935	93,200	1,800,000	21,387,751
2007	823,813	1,082,987	93,200	2,000,000	22,008,588
2008	869,123	1,237,677	93,200	2,200,000	22,511,091
2009	916,924	1,389,876	93,200	2,400,000	22,888,320
2010	967,355	1,579,822	93,200	2,640,378	23,132,918
2011	1,020,560	1,650,914	93,200	2,764,674	23,193,895
2012	1,076,690	1,725,206	93,200	2,895,096	23,183,703
2013	1,135,908	1,802,840	93,200	3,031,948	23,093,225
2014	1,198,383	1,883,968	93,200	3,175,551	22,912,462
2015	1,264,294	1,968,746	93,200	3,326,241	22,630,455
2016	1,333,831	2,057,340	93,200	3,484,370	22,235,198
2017	1,407,191	2,149,920	93,200	3,650,311	21,713,551
2018	1,484,587	2,246,666	93,200	3,824,453	21,051,138
2019	1,566,239	2,347,766	93,200	4,007,206	20,232,240
2020	1,652,382	2,453,416		4,105,798	19,239,683
2021	1,743,263	2,563,820		4,307,083	18,154,403
2022	1,839,143	2,679,191		4,518,334	16,864,201
2023	1,940,296	2,799,755		4,740,051	15,347,368
2024	2,047,012	2,925,744		4,972,756	13,580,220
2025	2,159,598	3,057,403		5,217,000	11,536,927
2026	2,278,375	3,194,986		5,473,361	9,189,334
2027	2,403,686	3,338,760		5,742,446	6,506,759
2028	2,535,889	3,489,004		6,024,893	3,455,781
2029	2,675,363			2,675,363	0

All amounts assume payments will be made August 15 of each fiscal year.

Amortization of unfunded liability on 4.5% annual increasing basis to FY2028.

FY05 appropriation was maintained at the same level as the prior schedule.

FY05-FY09 is a phase-in period to the schedule. Appropriation amounts for these years cannot be lower than the scheduled amounts.

## 5. GASB STATEMENT NO. 25: ACTUARIAL INFORMATION

The actuarial information required by Governmental Accounting Standards Board (GASB) Statement No. 25 is shown below.

### Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)* (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Cov. Payroll ((b-a)/c)
1/1/2004	\$20,295,180	\$40,239,767	\$19,944,587	50.4%	\$9,736,750	204.8%
1/1/2003	\$16,790,105	\$39,455,878	\$22,665,773	42.6%	\$9,162,439	247.4%
1/1/2001	\$17,881,000	\$29,439,000	\$11,558,000	60.7%	\$7,646,000	151.2%

\*excludes State reimbursed COLA

### Notes To Schedules

Additional information as of the latest actuarial valuation follows.

Valuation Date	January 1, 2004
Actuarial Cost Method	Individual entry age normal
Amortization Method	4.5% increasing
Remaining Amortization Period	24 years
Asset Valuation Method	Actuarial value, 5-year smoothing

### Principal Actuarial Assumptions:

Investment Rate of Return	8.0%
Projected Salary Increases	Service based table with ultimate rates of 4.75%, 5.00%, and 5.25% for groups 1, 2, and 4 respectively.

## 6. PLAN ASSETS

### A | BREAKDOWN OF ASSETS BY INVESTMENT TYPE

Cash and Cash Equivalents	\$1,580,038
Pooled Domestic Equity Funds	8,423,287
Pooled International Equity Funds	1,472,870
Pooled Domestic Fixed Income Funds	6,869,211
Pooled Real Estate Funds	1,154,516
Accounts Receivable	57,626
Accounts Payable	<u>(28,801)</u>
Total	\$19,528,747

### B | BREAKDOWN OF ASSETS BY FUND

Annuity Savings Fund	\$6,515,154
Annuity Reserve Fund	2,137,495
Pension Fund	875,085
Pension Reserve Fund	<u>10,001,013</u>
Total	\$19,528,747

C | MARKET VALUE OF ASSETS \$19,528,747

D | ACTUARIAL VALUE OF ASSETS \$20,295,180

## 6. PLAN ASSETS *(continued)*

### E | DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

	2003	2004
<b>A. Development of total investment income including appreciation</b>		
1. Beginning of year market value	16,790,105	19,528,747
2a. Employee contributions	795,435	
b. Employer contributions	1,320,382	
c. Other receipts	377,071	
d. Total receipts: (a) + (b) + (c)	2,492,888	
e. Benefit payments	2,080,052	
f. Expenses	206,132	
g. Other disbursements	420,631	
h. Total disbursements: (e) + (f) + (g)	2,706,815	
i. Cash flow before receivables: (d) – (h)	(213,927)	
j. Net receivables current year	28,825	
k. Net receivables prior year	15,212	
l. Total cash flow after receivables: (i) + (j) – (k)	(200,314)	
3. End of year market value	19,528,747	
4. Investment income including appreciation: (3) – (1) – (2(l))	2,938,956	
<b>B. Expected market value development</b>		
1. Beginning of year market value	16,790,105	
2. Cash flow (A2(l))	(200,314)	
3. Expected Return on (1)	1,343,208	
4. Expected return on cash flow excluding receivables $A2(i) \times 0.08 / 2$	(8,557)	
5. Expected market value end of year $(1)+(2)+(3)+(4)$	17,924,442	
<b>C. Gain/(loss) for year: A3-B5</b>	1,604,305	
<b>D. Development of Actuarial Value of Assets</b>		
1. Beginning of year market value	16,790,105	19,528,747
2a. Asset gain/(loss) in prior year	(2,086,383)	1,604,305
b. Asset gain/(loss) in 2 <sup>nd</sup> prior year	(1,995,118)	(2,086,383)
c. Asset gain/(loss) in 3 <sup>rd</sup> prior year	0	(1,995,118)
d. Asset gain/(loss) in 4 <sup>th</sup> prior year	0	0
3. Unrecognized gain/(loss) $.8 \times [2a] + .6 \times [2b] + .4 \times [2c] + .2 \times [2d]$	(2,866,177)	(766,433)
4. Beginning of year actuarial value of assets: [1] - [3]	19,656,282	20,295,180
5. Actuarial value / Market value	117.1%	103.9%
6. Adjusted actuarial value: (4) but not less than 90% nor greater than 110% of market value		20,295,180

## 7. INFORMATION ON SYSTEM MEMBERSHIP

A critical element of an actuarial valuation is accurate and up-to-date membership information. PERAC conducted an extensive review of member data submitted for this valuation.

### PART A | ACTIVE MEMBERS

	Actives	Vested Terminations
Number of Members	314	5
Average Age	42.9	53.5
Average Service	9.0	17.8
Average Salary	\$31,009	\$25,873
Average Annuity Savings Fund Balance	\$19,656	\$36,827

### Age by Service Distribution of Active Members

Present Age	Years of Service							Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	
0 - 24	15	1						16
25 - 29	26	12						38
30 - 34	21	8	2					31
35 - 39	21	8	7	8				44
40 - 44	19	13	7	8	2			49
45 - 49	18	5	4	4	8	6	1	46
50 - 54	9	4	5	12	3	4	2	39
55 - 59	4	3	9	10	5	2	2	35
60 - 64	1	5	2	1	1	0	0	10
65+	3	1	0	0	0	1	1	6
Total	137	60	36	43	19	13	6	314

## 7. INFORMATION ON SYSTEM MEMBERSHIP *(continued)*

### PART A | ACTIVE MEMBERS *(continued)*

#### Salary by Age Distribution of Active Members

Present Age	Number of Members	Total Salary	Average Salary
0 - 24	16	\$308,830	\$19,302
25 - 29	38	\$1,264,280	\$33,271
30 - 34	31	\$1,004,832	\$32,414
35 - 39	44	\$1,429,588	\$32,491
40 - 44	49	\$1,364,660	\$27,850
45 - 49	46	\$1,518,170	\$33,004
50 - 54	39	\$1,165,244	\$29,878
55 - 59	35	\$1,239,126	\$35,404
60 - 64	10	\$314,847	\$31,485
65+	6	\$127,173	\$21,196
Total	314	\$9,736,750	\$31,009



## 7. INFORMATION ON SYSTEM MEMBERSHIP *(continued)*

### PART B | RETIREES AND SURVIVORS

	Superannuation	Ordinary Disability	Accidental Disability	Survivors	Total
Number of Members	115	0	20	25	160
Average Age	72.5	N/A	62.9	70.6	71.0
Average Annual Benefit	\$12,445	N/A	\$23,541	\$10,116	\$13,468

### Benefit by Payment and Retirement Type

	Superannuation	Ordinary Disability	Accidental Disability	Survivors	Total
Total Annuity	\$205,360	\$0	\$28,243	\$13,987	\$247,590
Pension (excluding State reimbursed COLA)	\$1,163,514	\$0	\$418,544	\$202,870	\$1,784,928
State reimbursed COLA	\$62,276	\$0	\$24,029	\$36,040	\$122,345
Total	\$1,431,150	\$0	\$470,816	\$252,897	\$2,154,863

## 7. INFORMATION ON SYSTEM MEMBERSHIP *(continued)*

### PART B | RETIREES & SURVIVORS *(continued)*

#### Benefit by Age Distribution

Present Age	Number of Members	Total Benefits	Average Benefits
Less than 40	0	\$0	\$0
40 - 44	2	\$92,096	\$46,048
45 - 49	4	\$76,208	\$19,052
50 - 54	4	\$60,983	\$15,246
55 - 59	21	\$371,665	\$17,698
60 - 64	15	\$249,152	\$16,610
65 - 69	23	\$373,961	\$16,259
70 - 74	28	\$353,540	\$12,626
75 - 79	28	\$296,269	\$10,581
80 - 84	19	\$159,898	\$8,416
85 - 89	13	\$94,931	\$7,302
90+	3	\$26,160	\$8,720
Totals	160	\$2,154,863	\$13,468

## 8. VALUATION COST METHODS

### PART A | ACTUARIAL COST METHOD

The Actuarial Cost Method which was used to determine pension liabilities in this valuation is known as the *Entry Age Normal Cost Method*. Under this method the *Normal Cost* for each active member on the valuation date is determined as the level percent of salary, which, if paid annually from the date the employee first became a member of the retirement system, would fully fund by retirement, death, disability or termination, the projected benefits which the member is expected to receive. The *Actuarial Liability* for each member is determined as the present value as of the valuation date of all projected benefits which the member is expected to receive, minus the present value of future annual Normal Cost payments expected to be made to the fund. Since only active members have a Normal Cost, the Actuarial Liability for inactives, retirees and survivors is simply equal to the present value of all projected benefits. The sum of Normal Cost and Actuarial Liability for each member is equal to the Normal Cost and Actuarial Liability for the Plan. The *Unfunded Actuarial Liability* is the Actuarial Liability less current assets.

The Normal Cost for a member will remain a level percent of salary for each year of membership except for changes in provisions of the Plan or the actuarial assumptions employed in projection of benefits and present value determinations. The Normal Cost for the entire system will also change due to the addition of new members or the retirement, death or termination of members. The Actuarial Liability for a member will increase each year to reflect the additional accrual of Normal Cost. It will also change if the Plan provisions or actuarial assumptions are changed.

Differences each year between the actual experience of the Plan and the experience projected by the actuarial assumptions are reflected by adjustments to the Unfunded Actuarial Liability. An experience difference which increases the Unfunded Actuarial Liability is called an *Actuarial Loss* and one which decreases the Unfunded Actuarial Liability is called an *Actuarial Gain*.

### PART B | ASSET VALUATION METHOD

The actuarial value of assets is determined in accordance with the deferred recognition method under which 20% of the gains or losses occurring in the prior year are recognized, 40% of those occurring 2 years ago, etc., so that 100% of gains or losses occurring 5 years ago are recognized. The actuarial value of assets will be adjusted, if necessary, in order to remain between 90% and 110% of market value.

## 9. ACTUARIAL ASSUMPTIONS

### INVESTMENT RETURN

8.0% per year

### INTEREST RATE CREDITED TO THE ANNUITY

### SAVINGS FUND

3.5% per year

### COST OF LIVING INCREASES

3.0% per year

### SALARY INCREASE

Service	Group 1	Group 2	Group 4
0	7.00%	7.00%	8.00%
1	6.50%	6.50%	7.50%
2	6.50%	6.50%	7.00%
3	6.00%	6.00%	6.50%
4	6.00%	6.00%	6.00%
5	5.50%	5.50%	6.00%
6	5.50%	5.50%	5.50%
7	5.00%	5.00%	5.50%
8	5.00%	5.00%	5.25%
9	4.75%	5.00%	5.25%
10+	4.75%	5.00%	5.25%

### MORTALITY

RP- 2000 Healthy Annuitant table (gender distinct). This is applicable to both pre-retirement and post-retirement benefits. For disabled members, the mortality rate is assumed to be in accordance with the RP- 2000 Table (gender distinct) set forward 2 years. It is assumed that 55% of pre-retirement deaths are job-related for Group 1 and 2 members and 90% are job-related for Group 4 members. For members retired under an Accidental Disability, 40% of deaths are assumed to be from the same cause as the disability.

## 9. ACTUARIAL ASSUMPTIONS *(continued)*

### WITHDRAWAL

Based on analysis of past experience. Annual rates are based on years of service. Sample annual rates for Groups 1 and 2 are shown below. For Group 4 members the rate is 0.015 each year for service up to and including 10 years. No withdrawal is assumed thereafter.

Service	Groups 1 & 2
0	0.150
5	0.076
10	0.054
15	0.033
20	0.020

### DISABILITY

Based on an analysis of past experience. It is also assumed that the percentage of job-related disabilities is 55% for Groups 1 & 2 and 90% for Group 4.

Age	Groups 1 & 2	Group 4
20	0.00010	0.0010
30	0.00030	0.0030
40	0.00101	0.0030
50	0.00192	0.0125
60	0.00280	0.0085

### ADMINISTRATIVE EXPENSES

An amount of \$100,000 has been included in the Normal Cost for FY05. This amount is assumed to increase by the salary increase assumption each year.

## 9. ACTUARIAL ASSUMPTIONS *(continued)*

### RETIREMENT (SUPERANNUATION)

Age	Groups 1 & 2		Group 4
	Male	Female	
45-49	0.000	0.000	0.010
50	0.010	0.015	0.020
51	0.010	0.015	0.020
52	0.010	0.020	0.020
53	0.010	0.025	0.050
54	0.020	0.025	0.075
55	0.020	0.055	0.150
56	0.025	0.065	0.100
57	0.025	0.065	0.100
58	0.050	0.065	0.100
59	0.065	0.065	0.150
60	0.120	0.050	0.200
61	0.200	0.130	0.200
62	0.300	0.150	0.250
63	0.250	0.125	0.250
64	0.220	0.180	0.300
65	0.400	0.150	1.000
66	0.250	0.200	1.000
67	0.250	0.200	1.000
68	0.300	0.250	1.000
69	0.300	0.200	1.000
70 and after	1.000	1.000	1.000

## 10. SUMMARY OF PLAN PROVISIONS

### ADMINISTRATION

There are 106 contributory Retirement Systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by Chapter 32 of the Massachusetts General Laws. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.

### PARTICIPATION

Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the retirement board, and approved by PERAC. Membership is optional for certain elected officials.

There are 3 classes of membership in the Retirement System:

**Group 1:**

General employees, including clerical, administrative, technical and all other employees not otherwise classified.

**Group 2:**

Certain specified hazardous duty positions.

**Group 4:**

Police officers, firefighters, and other specified hazardous positions.

### MEMBER CONTRIBUTIONS

Member contributions vary depending on the most recent date of membership:

Prior to 1975:	5% of regular compensation
1975 - 1983:	7% of regular compensation
1984 to 6/30/96:	8% of regular compensation
7/1/96 to present:	9% of regular compensation
1979 to present:	an additional 2% of regular compensation in excess of \$30,000.

### RATE OF INTEREST

Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least 10 financial institutions.

## 10. SUMMARY OF PLAN PROVISIONS *(continued)*

### RETIREMENT AGE

The mandatory retirement age for some Group 2 and Group 4 employees is age 65. Most Group 2 and Group 4 members may remain in service after reaching age 65. Group 4 members who are employed in certain public safety positions are required to retire at age 65. There is no mandatory retirement age for employees in Group 1.

### SUPERANNUATION RETIREMENT

A member is eligible for a superannuation retirement allowance (service retirement) upon meeting the following conditions:

- completion of 20 years of service, or
- attainment of age 55 if hired prior to 1978, or if classified in Group 4, or
- attainment of age 55 with 10 years of service, if hired after 1978, and if classified in Group 1 or 2

### AMOUNT OF BENEFIT

A member's annual allowance is determined by multiplying average salary by a benefit rate related to the member's age and job classification at retirement, and the resulting product by his creditable service. The amount determined by the benefit formula cannot exceed 80% of the member's highest three year average salary. For veterans as defined in G.L. c. 32, s. 1, there is an additional benefit of \$15 per year for each year of creditable service, up to a maximum of \$300.

- Salary is defined as gross regular compensation.
- Average Salary is the average annual rate of regular compensation received during the 3 consecutive years that produce the highest average, or, if greater, during the last three years (whether or not consecutive) preceding retirement.
- The Benefit Rate varies with the member's retirement age, but the highest rate of 2.5% applies to Group 1 employees who retire at or after age 65, Group 2 employees who retire at or after age 60, and to Group 4 employees who retire at or after age 55. A .1% reduction is applied for each year of age under the maximum age for the member's group. For Group 2 employees who terminate from service under age 55, the benefit rate for a Group 1 employee shall be used.



## 10. SUMMARY OF PLAN PROVISIONS *(continued)*

### DEFERRED VESTED BENEFIT

A participant who has completed 10 or more years of creditable service is eligible for a deferred vested retirement benefit. Elected officials and others who were hired prior to 1978 may be vested after 6 years in accordance with G.L. c. 32, s. 10.

The participant's accrued benefit is payable commencing at age 55, or the completion of 20 years, or may be deferred until later at the participant's option.

### WITHDRAWAL OF CONTRIBUTIONS

Member contributions may be withdrawn upon termination of employment. Employees who first become members on or after January 1, 1984, may receive only limited interest on their contributions if they voluntarily terminate their service. Those who leave service with less than 5 years receive no interest; those who leave service with greater than 5 but less than 10 years receive 50% of the interest credited.

### DISABILITY RETIREMENT

The Massachusetts Retirement Plan provides 2 types of disability retirement benefits:

#### ORDINARY DISABILITY

**Eligibility:** Non-veterans who become totally and permanently disabled by reason of a non-job related condition with at least 10 years of creditable service (or 15 years creditable service in systems in which the local option contained in G.L. c. 32, s.6(1) has not been adopted).

Veterans with ten years of creditable service who become totally and permanently disabled by reason of a non-job related condition prior to reaching "maximum age".

**Retirement Allowance:** Equal to the accrued superannuation retirement benefit as if the member was age 55. If the member is a veteran, the benefit is 50% of the member's final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 55, he or she will receive not less than the superannuation allowance to which he or she is entitled.

## 10. SUMMARY OF PLAN PROVISIONS *(continued)*

### ACCIDENTAL DISABILITY

**Eligibility:** Applies to members who become permanently and totally unable to perform the essential duties of the position as a result of a personal injury sustained or hazard undergone while in the performance of duties. There are no minimum age or service requirements.

**Retirement Allowance:** 72% of salary plus an annuity based on accumulated member contributions, with interest. This amount is not to exceed 100% of pay. For those who became members in service after January 1, 1988 or who have not been members in service continually since that date, the amount is limited to 75% of pay. There is an additional pension of \$593.52 per year (or \$312.00 per year in systems in which the local option contained in G.L. c. 32, s.7(2)(a)(iii) has not been adopted), per child who is under 18 at the time of the member's retirement, with no age limitation if the child is mentally or physically incapacitated from earning. The additional pension may continue up to age 21 for any child who is a full time student at an accredited educational institution.

### ACCIDENTAL DEATH

**Eligibility:** Applies to members who die as a result of a work-related injury or if the member was retired for accidental disability and the death was the natural and proximate result of the injury or hazard undergone on account of which such member was retired.

**Allowance:** An immediate payment to a named beneficiary equal to the accumulated deductions at the time of death, plus a pension equal to 72% of current salary and payable to the surviving spouse, dependent children or the dependent parent, plus a supplement of \$312 per year, per child, payable to the spouse or legal guardian until all dependent children reach age 18 or 21 if a full time student, unless mentally or physically incapacitated.

The surviving spouse of a member of a police or fire department or any corrections officer who, under specific and limited circumstances detailed in the statute, suffers an accident and is killed or sustains injuries resulting in his death, may receive a pension equal to the maximum salary for the position held by the member upon his death.

In addition, an eligible family member may receive a one time payment of \$100,000.00 from the State Retirement Board.

## 10. SUMMARY OF PLAN PROVISIONS *(continued)*

### DEATH AFTER ACCIDENTAL DISABILITY RETIREMENT

Effective November 7, 1996, Accidental Disability retirees were allowed to select Option C at retirement and provide a benefit for an eligible survivor. For Accidental Disability retirees prior to November 7, 1996, who could not select Option C, if the member's death is from a cause unrelated to the condition for which the member received accidental disability benefits, a surviving spouse will receive an annual allowance of \$6,000.

### DEATH IN ACTIVE SERVICE

**Allowance:** An immediate allowance equal to that which would have been payable had the member retired and elected Option C on the day before his or her death. For death occurring prior to the member's superannuation retirement age, the age 55 benefit rate is used. The minimum annual allowance payable to the surviving spouse of a member in service who dies with at least two years of creditable service is \$3,000, provided that the member and the spouse were married for at least one year and living together on the member's date of death.

The surviving spouse of such a member in service receives an additional allowance equal to the sum of \$1,440 per year for the first child and \$1,080 per year for each additional child until all dependent children reach age 18 or 22 if a full time student, unless mentally or physically incapacitated.

### COST OF LIVING

If a system has accepted Chapter 17 of the Acts of 1997, and the Retirement Board votes to pay a cost of living increase for that year, the percentage is determined based on the increase in the Consumer Price Index used for indexing Social Security benefits, but cannot exceed 3.0%. Section 51 of Chapter 127 of the Acts of 1999, if accepted, allows boards to grant COLA increases greater than that determined by CPI but not to exceed 3.0%. The first \$12,000 of a retiree's total allowance is subject to a cost-of-living adjustment. The total Cost-of-Living adjustment for periods from 1981 through 1996 is paid for by the Commonwealth of Massachusetts.

## 10. SUMMARY OF PLAN PROVISIONS *(continued)*

### METHODS OF PAYMENT

A member may elect to receive his or her retirement allowance in one of 3 forms of payment.

**Option A:** Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the member's death.

**Option B:** A reduced annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member, provided, however, that if the total amount of the annuity portion received by the member is less than the amount of his or her accumulated deductions, including interest, the difference or balance of his accumulated deductions will be paid in a lump sum to the retiree's beneficiary or beneficiaries of choice.

**Option C:** A reduced annual allowance, payable in monthly installments, commencing at retirement. At the death of the retired employee,  $\frac{2}{3}$  of the allowance is payable to the member's designated beneficiary (who may be the spouse, or former spouse who remains unmarried for a member whose retirement becomes effective on or after February 2, 1992, child, parent, sister, or brother of the employee) for the life of the beneficiary. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases (or "pops up") based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable "pops up" in the same fashion. The Option C became available to accidental disability retirees on November 7, 1996.

### ALLOCATION OF PENSION COSTS

If a member's total creditable service was partly earned by employment in more than one retirement system, the cost of the "pension portion" is allocated between the different systems pro rata based on the member's service within each retirement system.

## II. GLOSSARY OF TERMS

### ACTUARIAL ACCRUED LIABILITY

That portion of the Actuarial Present Value of pension plan benefits which is not provided by future Normal Costs or employee contributions. It is the portion of the Actuarial Present Value attributable to service rendered as of the Valuation Date.

### ACTUARIAL ASSUMPTIONS

Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the amount and duration of pension benefits, such as: mortality, withdrawal, disablement and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

### ACTUARIAL COST METHOD (OR FUNDING METHOD)

A procedure for allocating the Actuarial Present Value of all past and future pension plan benefits to the Normal Cost and the Actuarial Accrued Liability.

### ACTUARIAL GAIN OR LOSS (OR EXPERIENCE GAIN OR LOSS)

A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions, during the period between two Actuarial Valuation dates.

**Note:** The effect on the Accrued Liability and/or the Normal Cost resulting from changes in the Actuarial Assumptions, the Actuarial Cost Method or pension plan provisions would be described as such, not as an Actuarial Gain (Loss).

### ACTUARIAL PRESENT VALUE

The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

### AMORTIZATION PAYMENT

That portion of the pension plan appropriation which represents payments made to pay interest on and the reduction of the Unfunded Accrued Liability.

## II. GLOSSARY OF TERMS *(continued)*

### ANNUAL STATEMENT

The statement submitted to PERAC each year that describes the asset holdings and Fund balances as of December 31 and the transactions during the calendar year that affected the financial condition of the retirement system.

### ANNUITY RESERVE FUND

The fund into which total accumulated deductions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

### ANNUITY SAVINGS FUND

The fund in which employee contributions plus interest credited are held for active members and for former members who have not withdrawn their contributions and are not yet receiving a benefit (inactive members).

### ASSETS

The value of securities as described in Section VIII.

### COST OF BENEFITS

The estimated payment from the pension system for benefits for the fiscal year. This is the minimum amount payable during the first six years of some Funding Schedules.

### FUNDING SCHEDULE

The schedule based upon the most recently approved actuarial valuation which sets forth the amount which would be appropriated to the pension system in accordance with Section 22D of M.G.L. Chapter 32.

### GASB

Governmental Accounting Standards Board

## II. GLOSSARY OF TERMS *(continued)*

### NORMAL COST

Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits, which is to be paid in a single fiscal year. The Employee Normal Cost is the amount of the expected employee contributions for the fiscal year. The Employer Normal Cost is the difference between the Total Normal Cost and the Employee Normal Cost.

### PENSION FUND

The fund into which appropriation amounts as determined by PERAC are paid and from which pension benefits are paid.

### PENSION RESERVE FUND

The fund which shall be credited with all amounts set aside by a system for the purpose of establishing a reserve to meet future pension liabilities. These amounts would include excess interest earnings.

### SPECIAL FUND FOR MILITARY SERVICE CREDIT

The fund which is credited with amounts paid by the retirement board equal to the amount which would have been contributed by a member during a military leave of absence as if the member had remained in active service of the retirement board. In the event of retirement or a non-job related death, such amount is transferred to the Annuity Reserve Fund. In the event of termination prior to retirement or death, such amount shall be transferred to the Pension Fund.

### UNFUNDED ACCRUED LIABILITY

The excess of the Actuarial Accrued Liability over the Assets.

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